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ABSTRACT

An analysis of languages with multiple fronting of WH words (who, what, whom, etc.) looks in detail at Polish, Serbo-Croatian, Czech, Bulgarian (Slavic languages), and Romanian (a Romance language). In spite of their superficial similarity, the Slavic and East European languages that normally put all WH words at the beginning of clauses fall into two distinct groups with different structures for multiple WH constructions. This difference in sentence structure accounts for the following systematic differences: extraction possibilities for multiple WH words; island effects; clitic position and occurrence of parentheticals and other material within the fronted WH-word sequence; and strictness of word order in multiple WH constructions in the two types of languages. The analysis also attempts to locate these two types within the broader range or typology of possible structures for multiple questions. (MSE)

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On Multiple Questions and Multiple WH Fronting*

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0. Introduction

It is a familiar fact that languages differ in the extent to which they place WH words in a special, clause-initial position. Some languages, like English, normally place one and only one WH word in the specifier position of CP,[1] so in a multiple question like (1a) **what** is in SpecCP but **to whom** is in situ. Other languages, like Chinese, have all WH words in situ at S-structure, as in (1b). (In some languages, for instance, French, WH movement is optional; (1c) shows that French can follow either the English or the Chinese pattern.) A third group of languages, less well known to general linguists, but including all of the Slavic languages as well as some others, moves all WH words to a clause-initial position at S-structure, as in the Russian example in (1d), where **kto**, **čto**, and **kegda** are fronted.

1.a. **What** did you give **to whom**?

b. Ni xiang-zhidao Lisi **weishenme** mai-le **shenme**? (Huang 1982)
you wonder Lisi why bought what
'**What** do you wonder **why** Lisi bought (it)?'

c. **Qu'** as- tu donné **à qui**? = Tu as donne **quoi à qui**?
what have you given to whom you have given what to whom

d. **Kto čto kegda** skazal? (Wachowitz 1974)
who what when said
'Who said what when?

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It is this third group of languages, those with multiple fronting at S-structure, that I am primarily concerned with in this paper. The languages I will deal with in detail are Polish, Serbo-Croatian, Czech, Bulgarian (all Slavic) and one Romance language, Romanian. Although multiple-WH-fronting languages have been recognized in the generative linguistic literature at

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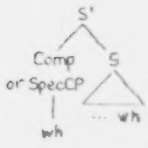
least since Wachowicz (1974), and several such languages have been discussed in the literature over the past decade, their structure has remained unclear. Analyses in which the WH words or phrases in questions like (1d) are all in some S-external position (Comp or Specifier of CP) have been put forward for example by Comorovski (1986), for Romanian, and by Rudin (1982), (1986) for Bulgarian. Other scholars have suggested that some or all of the WH words are in an S-internal position, perhaps adjoined to S. Reinhart (1982) argues for this view, on universal grounds, as do Toman (1981) and Cichocki (1983), arguing from the facts of Czech and Polish. Lasnik and Saito (1984) also take this position; the language they consider is Polish. The two possible structures are shown schematically in (2c,d), with non-multiple-fronting structures in (2a,b) for comparison.

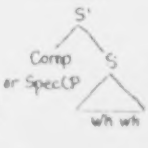
2. S-Structures:

non-multiple-fronting:

a. English

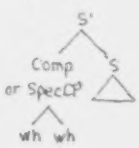


b. Chinese

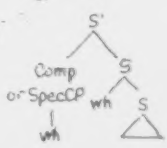


multiple WH-fronting languages

c.



d.



Analyses of multiple-fronting languages along the lines of (2d) were forced within early GB by the fact that a multiply filled Comp raises problems for standard GB notions such as the ECP and the requirement that WH words c-command (and thus bind) their traces (see for instance Chomsky (1981:52)), Kayne (1981:122)). These problems can however be overcome by a revised definition of c-command ("m-command" (Aoun and Sportiche (1983), Chomsky (1986:8))); the m-command domain is the next highest maximal projection, not the next highest branching node (given that Comp is not a maximal projection, as is clear in the model proposed by Chomsky (1986)), or by devices such as Comp indexing which allow the Comp node itself to serve as the proper governor of at least one WH trace for purposes of satisfying the ECP (see e.g. Lasnik and Saito (1984); Aoun, Hornstein, Lightfoot and Weinberg (to appear)). An indexing solution can easily extend to the analysis in which the landing site for WH movement is SpecCP rather than

Comp as well, as will be demonstrated below. It is thus an open empirical question whether (2c) or (2d) is correct, nothing in current formulations of GB theory necessarily rules out either analysis. In fact, my major claim in this paper is that both structure (2c) and structure (2d) exist as S-structures, in different languages. Since I assume the phrase structure proposed by Chomsky (1986), my claim will be more specifically that in some multiple WH-fronting languages all WH phrases are in SpecCP at S-structure, while in others only one WH phrase is in SpecCP and the others occupy an IP-initial position; I will argue that they are adjoined to IP.

The view that all of the WH words in sentences like (1) are in SpecCP at S-structure in at least some languages is attractive partly because it parallels the structure that has recently been assumed for LF by many linguists. Since Huang (1982) it has been widely accepted that WH movement applies at LF, not only to the S-Structure WH-in-situ in languages like Chinese, which have no syntactic WH movement, but also to the unmoved WH words in multiple questions in languages like English. The LF structure of (3a) is thus (3b), in which the WH word which was not moved at S-structure has been adjoined to SpecCP.

3.a. $[_{SpecCP}$ who$_i]$ e_i saw what?

b. $[_{SpecCP}$ what$_j$ [who$_i$]] e_i saw e_j ?

There is quite strong, although indirect and theory-dependent evidence for structure (3b) on both semantic and syntactic grounds. Semantically, this structure accounts for the uniform interpretation of multiple questions, or what has been termed "absorption"(Higginbotham & May (1980), Aoun, Hornstein, and Sportiche (1980)); that is, the fact that the WH words in a multiple question are interpreted as having the same scope. Syntactically, LF movement leaving a trace subject to the ECP can account for the existence of "superiority" phenomena in multiple questions.[2] The claim that some languages with multiple WH fronting do have all of the WH words in SpecCP at S-structure provides further concrete support for structures like (2b), and fills out a typology of WH movement such that languages choose freely at which level to move WH phrases to SpecCP: some languages (e.g. Bulgarian, as we shall see) do all WH movement in the syntax, others (Chinese, for instance) do it all at LF, and still others (English) move just one WH

in the syntax and any remaining ones at LF. All logical possibilities in (4) are then attested (French has the option of behaving like Chinese or like English)

4	*Chinese*	*French*	*English*	*Bulgarian*
single WH	LF	LF/syntax	syntax	syntax
multiple WH	LF	LF	LF	syntax

This not only provides support for the multiply-filled-Comp LF structure hypothesized as universal, but also makes available evidence for particular properties of this structure.

The article is organized as follows. In part 1 I examine the evidence that both hypotheses mentioned above, that multiple WH words in sentences like those in (1c) are in Comp at S-structure and that they are in S, are valid, in different languages. Although multiple WH constructions in all multiple-fronting languages appear very similar in simple cases, on closer inspection they turn out to differ significantly in a number of ways. These differences, including aspects of multiple extraction from a clause, WH-island effects, placement of clitics and parentheticals, and ECP effects in the ordering of WH words, cluster in a way which leads to the conclusion that there are two groups of multiple-fronting languages with quite different S-structures for multiple questions. Specifically, Bulgarian and Romanian have all of the WH words in SpecCP at S-structure (that is, they have a structure like (2c)), while Serbo-Croatian, Polish, and Czech have no more than one WH in SpecCP at S-structure (they have a structure like (2d); the other fronted WH words are not in SpecCP, but rather in some position inside IP). For descriptive purposes and for ease of reference, I will label languages of the Bulgarian type as "+MFS" (Multiply Filled SpecCP) and those of the Serbo-Croatian type as "-MFS" languages. In the second part of the paper I return to the issue of a crosslinguistic typology of WH Movement and multiple WH constructions. After discussing in more detail the internal structure of SpecCP and IP in the two types of multiple WH-fronting languages, I propose an account of the differences between them as well as among other, non-multiple-fronting types of languages in terms of a parameterized Condition on SpecCP Adjunction, based on Adams' (1984) Condition on Comp Adjunction. This condition disallows adjunction to SpecCP at specified levels of the grammar in

any given language. Certain aspects of the structure of multiple questions, including in particular the optional or obligatory character of WH movement to SpecCP and/or IP adjunction in various languages, are not accounted for by the Condition on SpecCP Adjunction. These however are probably attributable to independent factors, such as the level at which WH movement occurs and the mechanisms available for marking a clause +WH. The paper ends with a brief note on learnability.

1. Two Types of Multiple WH-Fronting Languages

The five languages I will be most concerned with all have multiple WH fronting. The following, with all WH phrases at the beginning of the clause, are typical multiple questions.

5.a. **Koj kogo** vižda? (Bulgarian)

who whom sees

'**Who** sees **whom**?'

b. **Cine cu ce** merge? (Romanian)

who with what goes

'**Who** goes **by what** (i.e. means of transportation)?'

c. **Ko koga** vidi? (Serbo-Croatian)

who whom sees

'**Who** sees **whom**?'

d. **Kdo koho** viděl? (Czech)

who whom saw

'**Who** saw **whom**?

e. **Kto co** robił? (Polish)

who what did

'**Who** did **what**?'

These simple multiple WH questions make all of the multiple fronting languages look extremely similar at first glance. However, important dissimilarities become evident when we turn to more complex multiple WH constructions. Sections 1.1, 1.2, 1.3, and 1.4 present

differences in multiple extraction, WH-island effects, the position of clitics and parentheticals, and word order, respectively. In each case we will see that the behavior of multiple WH words in Bulgarian and Romanian indicates that they are all in SpecCP, while in Serbo-Croatian, Polish, and Czech only one of the fronted WH words is in SpecCP.

1.1. Multiple WH Extraction from a Clause

The first difference between the two groups of languages that I will examine is the possibility for movement of multiple WH words out of an embedded clause. Such extraction is possible in the +MFS languages, Bulgarian and Romanian, but not in the -MFS type, including Serbo-Croatian, Polish, and Czech.

1.1.1. Bulgarian and Romanian

In Bulgarian, all of the WH words in a multiple question must move up to the closest interrogative SpecCP, even if this means extracting more than one WH from a clause. WH words may not remain in situ, nor in the specifier position of a non-interrogative clause:

6 a. **Koj kŭde** misliš [če e otišŭl _ _]?
who where think-2s that has gone
'**Who** do you think (that) went **where**?'

b. ***Koj** misliš [če e otišŭl _ **kŭde**]?
who think-2s that has gone where

c. ***Kŭde** misliš [če **koj** e otišŭl _]?
where think-2s that who has gone

d. ***Koj** misliš [**kŭde** (če) e otišŭl _ _]?
who think-2s where that has gone

e. ***Kŭde** misliš [**koj** (če) e otišŭl _ _]?
where think-2s who that has gone

This is true regardless of the type of WH phrases involved. Some examples with object WH phrases are given in (7). (Boris in these sentences is a Topic.[3])

7 a. Boris **na kogo kakvo** kaza [če šte dade _ _]?

Boris to whom what said that will give-3s

'**What** did Boris say that (he) would give **to whom**?'

b. *Boris **na kogo** kaza [če šte dade **kakvo** _]?

Boris to whom said that will give what

c. *Boris **kakvo** kaza [če šte dade _ **na kogo**]?

Boris what said that will give to whom

d. *Boris **kakvo** kaza [**na kogo** šte dade _ _]?

Boris what said to whom will give-3s

e. *Boris **na kogo** kaza [**kakvo** šte dade _ _]?[4]

Boris to whom said what will give-3s

However, this is not to say that multiple WH words can always be extracted from a clause. For instance, it is (not surprisingly) impossible to front both a relative and an interrogative WH to the same higher clause. As (11a-b) show, an interrogative clause can contain only interrogative WH words (or complementizer) in SPecCP, and a relative clause only relative WH words (or the relative complementizer **deto** in Comp). However, it is possible to extract both interrogative and relative WH phrases from a clause if each WH is able to move to an appropriate higher SpecCP position, as in (11c).

11 a. *Čoveka, **kojto kakvo** ne znaeš [(če) e kupil _ _] ...

the man who-rel what neg know-2s that has bought

b. *Čoveka, (deto) ne znaeš [**kakvo kojto** e kupil _ _] ...

the man that-rel neg know-2s what who-rel has bought

c. Čoveka, **kojto** ne znaeš [**kakvo** kazvat [če e kupil _ _]] ...

the man who-rel neg know-2s what say-3p that has bought

'The man **who** you don't know **what** they say that he bought ...'

But aside from this and a few other exceptions, extraction of multiple WH words is grammatical in Bulgarian, including in free relatives:

12.a. Vseki se otbivaše, **kojto kogato** i da mineše.

each dropped in who when and to passed

(lit) 'Each dropped in, **whoever whenever** was passing by.'

b. Vseki šte se otbie, **kojto kogato** i da ni kažeš [če trjabva da mine _ _].[5]

each will drop in who when and to us tell-2s that ought to pass

'Each will drop in, **whoever** you tell us ought to pass by **whenever**.'

In Romanian as well multiple WH Movement out of a clause is possible, as has been noted by Adams (1984) and Comorovski (1986). To give just two examples, all WH words must be fronted to the matrix clause SpecCP in questions like those in (13), where the subordinate clause is non-interrogative. The corresponding sentences with one or more of the WHs "left behind", either in situ or in the lower SpecCP position, are ungrammatical.

13a. **Cine cu cine** crezi [că a mers _ _]?

who with whom think-2s that has gone

'**Who** do you think went **with whom**?'

b. **Cine cui ce** ziceai [că i -a promis _ _ _]?[6]

who to-whom what said-2s that to-him has promised

'**Who** did you say promised **what to whom**?'

Even WH words that originate in different clauses can move to a single higher SpecCP in Romanian:

14. **Cine ce** ziceai [că _ își închipuie [că ai descoperit _]] ?

who what said-2s that to-himself imagines that have-2s discovered

'**Who** did you say imagines you discovered **what**?'

Thus, in both Bulgarian and Romanian movement of more than one WH word out of the clause in which they originate is fully normal and often obligatory.

1.1.2. Serbo-Croatian, Polish, and Czech

In the +MFS languages, on the other hand, multiple WH extraction from a clause is ungrammatical. In this section I briefly discuss the situation in Serbo-Croatian, Polish, and Czech in turn.

In Serbo-Croatian multiple questions involving movement out of a clause, all but one of the WH words can, and for most speakers? must remain in situ. Extraction of a second (or third) WH word from the clause, as in (15c,d), is ungrammatical, as is movement to the SpecCP position of the lower clause, as in (15e,f). Note that the "in situ" WH word is however normally placed to the left of the verb, the position in which focused material occurs. (Examples from Steven Franks.)

15.a. **Ko** želite [da vam **šta** kupi _]?

who want-2p to you what buy-3s

'**Who** do you want to buy you **what**?

b. **Šta** želite [da vam **ko** kupi _]?

what want-2p to you who buy-3s

'**What** do you want **who** to buy you?'

c. ***Ko šta** želite [da vam kupi _ _]?

who what want-2p to you buy

d. ***Šta ko** želite [da vam kupi _ _]?

what who want-2p to you buy-3s

e. ***Ko** želite [**šta** da vam kupi _ _]?

who want-2p what to you buy

f. ***Šta** želite [**ko** da vam kupi _ _]?

what want-2p who to you buy

In Polish, as in Serbo-Croatian, long movement of multiple WH words is impossible. It is more difficult to test this in Polish, since any extraction at all from a finite clause is normally ungrammatical. However, subjunctive complements do allow WH movement across a clause boundary. Example (22a), from Lasnik and Saito (1984), is grammatical. But an otherwise identical sentence with two WH words fronted out of the clause is not:

16.a. **Co** Maria chce, żeby Janek kupił?

what Maria wants that Janek buy

'**What** does Maria want Janek to buy?'

b. ***Co komu** Maria chce, żeby Janek kupił?

what to-whom Maria wants that Janek buy

'**What** does Maria want Janek to buy **for whom**?'

Certain "bridge" verbs also permit single WH words to be extracted, as in (17a), from Cichocki (1983), but here again multiple WH words may not be extracted.

17.a. **Co** Janek mówił, że studenci czytają?

what Janek said that students read

'**What** did Janek say that the students read?'

b. ***Dlaczego co** Janek mówił, że studenci cytają?

why what Janek said that students read

('**What** did Janek say the students read **why**?')

Like the other -MFS languages, Czech also allows extraction of only one WH word from a clause. Long distance movement of a single WH word is fully grammatical (examples from Toman (1982)):

18.a. **Kde** si myslíš, že budeme spát?

where refl think-2s that will-1p sleep

'**Where** do you think that we will sleep?'

b. **Kam** ti řekli, že ho máme dát?

where-to to-you said-3p that him have-1p put

'**Where** did they tell you that we should put him?'

But in spite of this extraction of more than one WH from a clause is impossible:

19.a. ***kde kdy** si myslíš, že budeme spát?[8]

where when refl think-2s that will-1p sleep

'**Where** do you think we will sleep **when**?'

b. ***Na koho kdy** si myslíš, že čekal?

for whom when refl think-2s that waited-3s

'**Who** do you think that he was waiting for **when**?'

1.1.3. Multiple Extraction and the ±MFS Hypothesis

In the last two sections we have seen that overt syntactic movement of more than one WH element to a higher clause, resulting in a configuration like (20), is possible in Bulgarian and Romanian but not Serbo-Croatian, Polish, or Czech.

20. $[_{CP} wh_i wh_j \ldots [_{CP} \ldots e_i \ldots e_j \ldots]]$

Given standard GB assumptions, this fact supports the contention that Bulgarian and Romanian allow multiple WHs in (adjoined to) SpecCP "in the syntax", i.e. at or before S-structure, while the other languages do not permit multiple WHs to adjoin to SpecCP except at LF.[9] In order to produce a structure like (20) without violating subjacency it is necessary for more than one WH phrase to pass through the embedded clause specifier position: a more detailed structure for (20), showing the traces in the lower SpecCP, is (21).

21. $[_{CP} wh_i wh_j \ldots [_{CP} [_{SpecCP} t_i [t_j]] \ldots e_i \ldots e_j \ldots]]$

Thus Bulgarian and Romanian must allow multiple WH traces to be adjoined to SpecCP at S-structure in order to have S-structures like (20).

It might be objected that the WH traces in (21) are not necessary if IP is not a bounding node for subjacency. However, Comorovski (1986) presents independent evidence based on a Y-fronting rule that the bounding node in Romanian is IP, not CP. Furthermore, neither Bulgarian nor Romanian has any restriction on how many clauses the WH words may cross; even if CP were the bounding node in these languages, the WH phrases would have to pass through the SpecCP positions of all but the lowest clause. Sentence (14) above shows multiple WH movement across more than one CP boundary in Romanian, and (22) demonstrates that this is possible in Bulgarian as well.

22. **Koj kŭde** misliš $[_{CP}$če Boris iska $[_{CP}$da kažeš $[_{CP}$če šte otide _ _]]] ?

who where think-2s that Boris wants to say-2s that will go-3s

'**Who** do you think Boris wants you to say will go **where**?' (Bulgarian)

The -MFS languages, which do not allow the surface syntactic configuration in (20), are prevented from doing so under the analysis suggested here by the fact that they are not able to have multiple WH-traces adjoined to SpecCP at S-structure.

1.2. WH Islands

Very closely related to the issue of multiple WH extraction to a higher clause is that of the island status of embedded questions. As Comorovski (1986) has noted, given subjacency as the explanation of WH islands, we predict that a language that allows multiple WH elements in Comp at the level at which WH Movement occurs "will not obey any form of the WH-Island Constraint", since in such a language a WH phrase could not be blocked from moving through or leaving a trace in a Comp that contains another WH. Adams (1984) makes the same observation, and of course it holds equally well if we substitute SpecCP for Comp as WH position. In the present case, we predict that Bulgarian and Romanian will not obey WH islands, but Serbo-Croatian, Polish, and Czech will, given our hypothesis that Bulgarian and Romanian are +MFS (allow multiple WHs in SpecCP at S-structure), while the other three languages are -MFS. This prediction holds, as we shall now see.

Bulgarian freely allows extraction of WH words from an embedded question, or even from several interrogative WH clauses, as in (23).

23. Vidjah edna kniga, **kojato**, se čudja [**koj** znae [**kŭde** se prodava _ ,]]

saw-I a book which wonder-I who knows where is-sold

'I saw a book **which** I wonder **who** knows **where** (it) is sold.'

Movement of an interrogative WH word out of an embedded WH question is usually felt to be less normal than of a relative pronoun, but it too is fairly acceptable with "heavy" WH phrases, as in (24b).[10]

24 a. ***Kakvo** se čudiš **koj** znae **kŭde** se prodava?

what wonder-2s who knows where is-sold

'**What** do you wonder **who** knows **where** is sold?'

b. ?**Koja ot tezi knigi** se čudiš **koj** znae **kŭde** se prodava?

which of these books wonder-2s who knows where is-sold

'**Which of these books** do you wonder **who** knows **where** is sold?'

This asymmetry between questioning and relativization is similar to the situation in some Scandinavian languages, where it has been suggested that semantic or pragmatic constraints make it more difficult to question than to relativize out of a question (see e.g. Lie (1982)). The difficulty of questioning out of a question extends to embedded yes-no questions as well: As the following examples show, questioning out of a non-interrogative clause and relativizing out of a question are fine, but questioning out of a question produces a sentence of quite low acceptability. Thus it is not simply a WH word in SpecCP that tends to block extraction in sentences like (24), but some other, perhaps non-syntactic, factor.

25.a. **Koj** misliš če e došŭl?

who think-2s that has come

'**Who** do you think has come?'

b. ...čoveka, **kojto** se čudiš dali e došŭl...

the-person who wonder-2s whether has come

'...the person **who** you wonder whether he has come...'

c. ??**Koj** se čudiš dali e došŭl?

who wonder-2s whether has come

'**Who** do you wonder whether came?'

Romanian allows WH Movement of both interrogative (26a) and relative (26b) WH phrases from inside an indirect question, although, as in Bulgarian, it is more difficult to construct acceptable examples with interrogative WH Movement. There is no limit on the number of clauses that may intervene between the fronted WH phrase and the extraction site. (Examples from Comorovski 1986)

26.a. **Pentru care clauză**$_i$ vrei să afli **cine** nu a decis încă **ce** va vota _$_i$?

For which paragraph want-2s to learn who not has decided yet what will-3s vote

'**For which paragraph** do you want to learn **who** has not decided yet **what** he will vote?'

b. Maria, **cu care**, ştiu ce crezi că am discutat _ , , ...

Maria, with whom know-1s what think-2s that have-1s discussed

'Maria, **with whom** I know **what** you think I discussed, ...'

In short, as expected given the +MFS hypothesis, Bulgarian and Romanian do not respect WH islands. Furthermore, the lack of WH island effects is not due to an absence of subjacency effects in general in these languages. Both Bulgarian and Romanian do obey other subjacency "islands"; for example, they do not allow movement from inside a Complex NP. (Once again the Romanian example (27b) is from Comorovski (1986).)

27.a. *Tova e momčeto **na koeto** misŭlta če (mu) dadohme bonboni jadosva

this is the-boy to whom the-thought that to-him gave-1p candy angers

lekara. (Bulgarian)

the-doctor

'This is the boy **to whom** the thought that we gave (him) candy makes the doctor angry.'

b. *Ambasadorul, **pe care** nu ai crezut zvonul că teroriŞti l-au

the-ambassador whom not have-2s believed the-rumor that terrorists him-have

răpit, nu a mai fost văzut de trei zile. (Romanian)

kidnapped not has more been seen for three days

'The ambassador, **whom** you didn't believe the rumor that the terrorists had kidnapped, has not been seen for three days.'

Turning now to the -MFS languages, we see that the situation is reversed; WH islands do in general hold. In Serbo-Croatian, neither questioning nor relativization is possible from inside a WH question, regardless of whether it is a subject or non-subject WH phrase that is extracted or whether a resumptive pronoun appears:

28.a. ***Ko** su li rekli **gde** živi?

who have-3p you asked where lives

'**Who** did they ask you **where** lives?'

b. *Šta si me pitao **ko** može da uradi?

what have-2s me asked who can to do

'**What** did you ask me **who** can do?'

c. *...osoba, **koja** sam ti rekao **gde** (on) živi...

individual, who have-1s you told where he lives

'...the individual **who** you asked me **where** (he) lives...'

Polish also does not allow either interrogative or relative WH Movement from inside a finite WH clause[11] (examples (29a,b) are from J. R. Williams (1986b)).

29.a. *Co on zapytał [$_S$ **kto** wynalazł _]?

what he asked who invented

'**What** did he ask **who** invented?'

b. *... maszyna **która**$_i$ on zapytał [$_S$ **kto** wynalazł _] ...

machine which he asked who invented

'...the machine **which** he asked **who** invented ...'

Cichocki (1983) points out that relativization from an infinitival WH clause, as in (30), is possible. However, he argues convincingly, based on facts involving conjunction, that the WH word in the embedded clause is not in SpecCP, or, in his terminology, that it is not in "Comp1"[12] but rather, in the position occupied by WH words other than the first one in a multiple question. That is, (30a) has the structure shown in (30b), and does not involve a WH word and a trace together in specifier position.

30.a. Pytanie **na które** zdecydowałeś się$_i$ [**jak** odpowiedzieć] było trudne.

question on which decided-2s refl. how to-answer was difficult

'The question which you decided how to answer was difficult.'

b. pytanie [$_S$[$_{Comp}$**na które**$_i$] ... [$_S$[$_{Comp}$t$_i$] **jak** opowiedzieć t$_i$]] ...

In Czech, some though not all speakers do accept WH-island violations like (31a) and the apparent violation in (31b); (*) indicates idiolectal variability:

31.a. (*)**Kdo** se tě ptal **co** dělá?

who have-3p you asked what does

'**Who** did they ask you **what** (he) does)?'

b. To je ten, **o kom** jsem ti řekl, **co** dělá.

that is the-one about whom have-1s you told what does

'That is the person **who** I asked you **what** (he) does.'

c. *To je ten, **kdo** jsem ti řekl, **co** dělá.

that is the-one who have-1s you told what does

However, note that (31b) is not a WH island violation at all: the oblique case form **o kom** indicates that this WH phrase is actually the object of **řekl** and presumably originated in the same clause it occupies at S-structure. The nominative **kdo**, the expected form if it were the D-structure subject of the most deeply embedded clause, is impossible, as shown in (31c). Sentence (31a), for those speakers who accept it, is more problematical, but still not a major problem for the -MFS hypothesis. It may be possible to explain it along the same lines as the Polish island violation in (30). And even if this turns out to be wrong, it is still possible within the account of multiple fronting constructions proposed in the second part of this paper to account for this variety of Czech in terms of a condition on Phonetic Form.

To summarize this section, the WH-island data, like the multiple extraction facts, support the contention that the multiple WH-fronting languages fall into two groups, differing in the position of fronted WH words and the structure of SpecCP at S-structure. Bulgarian and Romanian, which I analyze as allowing multiple WH phrases in SpecCP at S-structure, show exactly the predicted lack of WH island effects. On the other hand, Serbo-Croatian, Polish, and to a large extent also Czech do exhibit WH island effects, just as expected given that their multiple WH phrases are not in SpecCP except at LF.

1.3. Evidence for Constituent Structure

1.3.1. Clitic Position

Another respect in which multiple WH constructions in the +MFS and -MFS languages differ is the position of clitics relative to the WH words. Clitic position in the -MFS languages is most often between the first WH phrase and the second one, although there are sometimes other options too. In the +MFS languages clitics are placed after the whole series of WH phrases. In this section I demonstrate that this difference in clitic position reflects the different constituent structure of the fronted WH-word group in the two sets of languages. I begin by comparing Bulgarian and Serbo-Croatian and then look at the remaining languages.

In Bulgarian, as shown in (32) and (33), clitics (in this case the auxiliary **e** and pronoun **ti**) follow the entire group of fronted WH words. They may not split up the WH word sequence. In Serbo-Croatian, on the other hand, the clitic pronouns and auxiliaries must come directly after the first WH word, as can be seen in (34) and (35). No other position is possible, and in particular they may not come at the end of the sequence of WH words.

32.a. **Koj kakvo** ti e kazal? (B)

who what you has told

'Who told you what?'

b. ***Koj** ti e **kakvo** kazal?

who you has what told

33.a. **Koj kakvo na kogo** e dal? (B)

who what to whom has given

'**Who** gave **what** to **whom**?'

b. ***Koj kakvo** e **na kogo** dal?

who what has to whom given

c. ***Koj** e **kakvo na kogo** dal?

who has what to whom given

34.a. **Ko** mu je **šta** dao? (SC)

who him has what given

'Who gave him what?'

b. ***Ko šta** mu je dao?

who what him has given

35.a **Ko** je **što kome** dao. (SC)

who has what to-whom given

'**Who** gave **what to whom**?'

b ***Ko što** je **kome** dao?

who what has to-whom given

c. ***Ko što kome** je dao?

who what to whom has given

It might be objected that these facts could reflect a difference, not in the position of WH words, but rather in the clitic placement rules of Bulgarian and Serbo-Croatian. And in fact cliticization does work differently in the two languages. In Serbo-Croatian, all clitics are in clause-second position, while in Bulgarian they are proclitic to the verb. However, the clitic placement facts do nonetheless provide evidence for a difference in the constituent structure of the WH word sequence in the two languages.

"Second position" clitics in Serbo-Croatian are placed either after the first word or after the first major constituent of the sentence. For instance, in (36a-b) (from Browne (1976) the clitic **je** can follow either a full NP or the first word of the NP:

36.a Njegova prijateljica **je** profesor književnosti.

his friend-fem is professor of-literature

'His friend is a professor of literature.'

b Njegova **je** prijateljica profesor književnosti.

his is friend-fem professor of-literature

In (34a) and (35a) the clitics can follow **ko** simply because it is the first word of the sentence, regardless of constituent structure. But (34b) and (35b) do give conclusive evidence concerning constituency. The fact that clitics cannot follow a sentence-initial sequence of WH words such as

ko šta or **ko šta kome** proves decisively that such a sequence is not a constituent in Serbo-Croatian, unlike in Bulgarian, where, as we shall see below, there is good evidence that a sequence of fronted WH words such as **koj kakvo** or **koj kakvo na kogo** is a constituent.

A NLLT reviewer has suggested that the data in (32)-(35) could be due to a verb movement rule operating in Serbo-Croatian but not Bulgarian; pronominal clitics in Serbo-Croatian would front along with the (clitic) verb to which they are attached. This is clearly not the case, however, since clitic placement is the same in tenses with no cliticizing auxiliary verb, and verbs other than a very limited set of auxiliaries do not front:

37.a. **Koliko** im **ko** daje?

how-much to-them who gives

'Who gives them how much?'

b. **Ko** se **čega** boji?

who reflexive clitic of-what is-afraid

'Who is afraid of what?'

I will not go into further detail here, but there is a great deal of evidence that clitics in Serbo-Croatian are attached to the first element (word or constituent) in the clause, not necessarily to the verb. This "first element" specificially includes any filled Comp or SpecCP; see for instance Browne (1976, 1986:25).

What are the predictions for clitic position in the other multiple WH-fronting languages? The answer obviously depends on the specific clitic placement rules of each language, but some general predictions can be made. In particular, in the case where clitic placement is by encliticization to the first constituent of the clause, we should find that clitics follow the whole group of fronted WH words if the WHs form a constituent (i.e. in the +MFS languages, where they are all in SpecCP), but that they occur after the first one of the WH words when it does not form a constituent with the second and subsequent WHs (i.e. in the -MFS languages):

38.a. $[_{SpecCP}$WH WH WH$]$ clitics $[_{IP} \ldots]$ (+MFS languages)

b. $[_{SpecCP}$WH$]$ clitics $[_{IP}$WH WH $\ldots]$ (-MFS languages)

Thus Romanian should place clitics at the end of the WH-word sequence, and Polish and Czech should put them after the first WH word -- again, if their clitic position is after the first constituent. And indeed, this is essentially the pattern we find.

In Romanian, unfortunately, clitics are not clause-second, but rather proclitic to V. The clitics, including clitic pronouns like **le** 'them' in (39) as well as the auxiliary **a** 'has', do follow the entire WH-word sequence rather than just the first WH word.

39.a. Nu ştiu **cine ce** le-a spus.

neg know-1s who what them has told

'I don't know **who** told them **what**.'

b. *Nu ştiu **cine** le-a **ce** spus.

neg know-1s who them-has what told

40.a. **Cine cu cine** a mers?

who with whom has gone

'**Who** went with **whom**?'

b. ***Cine** a **cu cine** mers?

who has with whom gone

but of course this does not tell us anything about the constituent status of the WH words, since the ungrammaticality of the (b) sentences is due to the clitics in them being separated from the verb. Nonetheless, these facts do not contradict the pattern in (38), and they are therefore at least compatible with the +MFS hypothesis.

Both Polish and Czech do observe some version of Wackernagel's law, and from them we get more direct evidence for the structure (38b). In Polish, clitics have two options: they can appear in clause-second or preverbal position. But unlike in Serbo-Croatian, "clause-second position" always means following the first major constituent. A clitic is never placed after the first word of a sentence if that word is part of a non-clausal maximal projection, such as NP (see (41)) -- or SpecCP. The following examples are from Toman (1981).

41.a. [$_{NP}$Ten stary pan] wczoraj **się** ogolił.

this old man yesterday refl shaved-3s

'This old man shaved himself yesterday.'

b. [$_{NP}$Ten stary pan] **się** wczoraj ogolił.

this old man refl yesterday shaved

c. *[$_{NP}$Ten **się** stary pan] wczoraj ogolił.

this refl old man yesterday shaved

Clitics can however follow the first of two WH words:

42.a. **Kto** się **komu** podoba?

who refl. to-whom likes

'**Who** likes **who**?'

b. **Kto komu** się podoba?

who to-whom refl likes

43.a. **Gdzie** by **kto** poszedł?

where would who go

'**Who** would go **where**?'

b. **Gdzie kto** by poszedł?

where who would go

Sentences (42b) and (43b) represent the option of placing the clitics **się** or **by** adjacent to the verb regardless of what precedes (as in (43a)); they give no information about the constituent status of the string of WH words. However, the (a) versions do give such information. Since second-position clitics in Polish must follow the first major constituent, not the first word, these show conclusively that WH sequences like **kto komu** and **gdzie kto** are not single constituents. Cichocki (1983) gives further evidence for this point. In triple questions, clitics may follow the first WH word or may appear in the preverbal position at the end of the whole WH-word group, but they may not follow the second WH word. The clitic placement possibilities in (44) indicate that the first WH word alone comprises a major constituent (SpecCP), but the first two together do not.

44 a. WH (clitics) WH (*clitics) WH (clitics) V ...

b. **Kto** by **komu** **jaką** napisał książkę

who would-to-whom what-kind write book

'**Who** would write **what kind** of book **for whom**?'

c. ***Kto komu** by **jaką** napisał książkę

who to-whom would what-kind write book

d. **Kto komu** **jaką** by napisał książkę

who to-whom what-kind would write book

The situation with clitics is simpler in Czech than in the other -MFS languages. There is only one position for clitics; they always follow the first major constituent of the sentence. In the following example, adapted from Toman (1986), notice that the only grammatical position for the clitics **se** and **ti** is immediately after the sentence-initial NP; in particular, the presence of the adverb **jednou** makes it clear that the clitics may not follow more than one constituent (45c), nor may they interrupt a constituent (45b).

45 a. Tohle staré kolo **se** **ti** jednou rozpadne.

this old bicycle refl to-you once falls-apart

'This old bicycle will fall apart on you one day.'

b. *Tohle **se ti** staré kolo jednou rozpadne.

c. *Tohle staré kolo jednou **se ti** rozpadne.

d. *Tohle staré kolo jednou rozpadne **se ti**.

Under the -MFS analysis, in which the first WH word in a multiple question is set off by itself in SpecCP, clitics in multiple WH constructions would be expected always to follow the first WH word in Czech. None of the other options available in Serbo-Croatian and Polish should be available. And exactly this is the case (examples are from Toman (1981) and (1986)):

46 a. **Kdo** ho **kde** viděl je nejasné.

who him where saw is unclear

'**Who** saw him **where** is unclear.'

b. ***Kdo kde** ho viděl je nejasné.

who where him saw is unclear

47a. **Komu** ho **kdy** dali, nikdo neví.

to-whom him when gave-3p nobody knows

'Nobody knows **when** they gave him **to whom**.'

b. ***Komu kdy** ho dali, nikdo neví.

to-whom when him gave-3p nobody knows

In summary, the position of clitics provides good evidence in each of the -MFS languages studied that the fronted WH words in multiple questions do not form a constituent. Although the details of clitic placement are different in Serbo-Croatian, Polish, and Czech, in all three languages clitics which are placed after the first constituent of the clause appear immediately following the first of the fronted WH phrases. In no case can clitics appear after the second of three WH phrases, and in the one case where they can appear at the end of the entire WH-word sequence, in Polish, it is because the language independently allows the option of procliticization to Y. These facts clearly support an analysis in which the first WH word alone is a constituent separate from the other WHs, that is, the first WH is in Spec CP, while the others are not. The evidence for constituent structure of the WH-word group based on clitic position is inconclusive for the +MFS languages, unfortunately, since in both Bulgarian and Romanian clitics are attached to Y, not placed in clause-second position. However, clitic position does not provide any arguments against the hypothesis that all of the fronted WH words are in SpecCP in these languages, and we will see in the next section that there are independent reasons to consider the entire sequence of WH phrases in +MFS languages to be a single constituent.

1.3.2. Parentheticals and Related Phenomena

Another source of evidence for a difference in constituent structure between the two groups of languages is the possibility or impossibility of interrupting the WH-word sequence with adverbs, particles, or parenthetical phrases. Once again, as with each area of difference we have looked at, Romanian and Bulgarian pattern together, while Polish and Czech are like Serbo-

Croatian. In the +MFS languages, generally nothing may intervene between the fronted WH words, but in the -MFS languages various types of material can appear after the first WH word, further supporting the idea that the first WH is a separate constituent in the -MFS but not in the +MFS languages.

A typical example of the difference in freedom of occurrence of adverbs is the contrast between (48) and (49). In the Bulgarian sentence the adverb meaning "first" (underlined) cannot be placed between the two WH words. But in the parallel Serbo-Croatian example, the adverb may appear between them. (Recall that the clitic **je** must be in second position in the clause; **prvi** therefore cannot come immediately after **ko**.) Although some speakers find (49a) slightly more natural than (49b), (49b) is far more normal than the totally ungrammatical (48b) in Bulgarian.

48 a. Zavisi ot tova, **koj kogo** prŭv e udaril. (Bulgarian)

depends on this who whom first has hit

'It depends on **who** hit **whom** first.'

b. *Zavisi ot tova, **koj** prŭv **kogo** e udaril.

depends on this who first whom has hit

49 a. **Ko** je **koga** prvi udario? (Serbo-Croatian)

who has whom first hit

'**Who** hit **whom** first?'

b. **Ko** je prvi **koga** udario?

who has first whom hit

I do not have complete data on the possibility of adverbs appearing within the WH-word group in the other multiple fronting languages, but the contrast between Bulgarian and Serbo-Croatian is certainly suggestive, and would be predicted to extend to the other languages as well.

Parenthetical phrases, like sentence adverbs, tend to occur most comfortably at major constituent boundaries. In view of this fact, it is of interest to investigate the positions which parenthetical phrases may occupy in multiple questions in the multiple WH-fronting languages.

In Romanian and Bulgarian, parentheticals do not easily split the fronted WH-word sequence. Comorovski (1986) states that no parentheticals may intervene between the WH phrases in a multiple question in Romanian, but in fact the data on this point are somewhat murky. Speakers I have consulted give unclear and sometimes contradictory judgements of sentences like those in (50), the "?*" markings represent the fact that most speakers are hesitant about accepting either variant.

50.a. ?***Cine**, după părerea ta, **ce** a făcut?

who after opinion your what has done

'**Who**, in your opinion, did **what**?'

b. ?***Cine ce**, după părerea ta, a făcut?

who what after opinion your has done

Although the awkwardness of (50b) is puzzling, the fact that (50a) is of low acceptability is just what we would predict, given that **cine** and **ce** form a constituent (cf. (38a)). The problem with the examples (50) is not simply unwillingness to accept the parenthetical phrase, as all speakers find the sentences in (51) fully grammatical.

51.a. **Cine**, după părerea ta, a făcut asta?

who after opinion your has done that

'**Who**, in your opinion, did that?'

b. După părerea ta, **cine ce** a făcut?

'In your opinion, **who** did **what**?

c. **Cine ce** a făcut, după părerea ta?

'**Who** did **what**, in your opinion?'

A parenthetical in a non-multiple question or at the beginning or end of the sentence in a multiple question is fine, but either within or after the WH-word group in a multiple question it produces uncertain acceptability at best. In Bulgarian the situation is similar:

52.a. ?***Koj**, spored tebe, **kakvo** e kazal?

who according-to you what has said

'**Who**, in your opinion, said **what**?'

b. ?***Koj kakvo**, spored tebe, e kazal?

who what according-to you has said

This uneasiness with parentheticals in multiple questions does not extend to Serbo-Croatian, Czech, and Polish, however. In Serbo-Croatian, for example, sentences with a parenthetical phrase after the first WH word are fine:

53.a. **Ko**, po tebi, **šta** pije?

who by you what drinks

'**Who**, according to you, is drinking **what**?

b. Ono što mene zanima je, **ko**, po tvom mišljenju, **šta** radi?

that that me interests is who by your opinion what does

'What interests me is **who**, in your opinion, is doing **what**?'

The parenthetical phrase may come at the end of the WH-word sequence as well.[13]

54.a. **Ko šta**, po tebi, pije?

who what by you drinks

b. Ono što mene zanima je, **ko šta**, po tvom mišljenju, radi?

that that me interests is who what by your opinion does

Cichocki (1983) demonstrates that parentheticals, like clitics, may come after the first WH word of a fronted WH sequence, or after the whole group, but not after the second one of three (compare (44) above):

55.a. **Kto** według ciebie **komu co** dał?

who according-to you to-whom what gave

'**Who** in your opinion gave **what** to **whom**?'

b. ***Kto komu** według ciebie **co** dał?

who to-whom according-to you what gave

c. **Kto komu co** według ciebie dał?

who to-whom what according-to you gave

This could be taken as an indication that the second and third WH words form a constituent together (in fact, Cichocki does so argue), however, this conclusion does not hold for the other -MFS languages. In Czech, for example, parentheticals can appear anywhere in the WH-word sequence. Unlike in Polish, a parenthetical phrase may occur not only after the first WH word or after the whole sequence, but also between the second and third of three WH words, as in (56b):

56.a. **Kdo**, podle tebe, **co komu** dal?
who according-to you what to-whom gave
'**Who**, according to you, gave **what to whom**?'

b. **Kdo co**, podle tebe, **komu** dal?
who what according-to you to-whom gave

c. **Kdo co komu**, podle tebe, dal?
who what to-whom according-to you gave

In spite of minor language-specific differences, the distribution of parentheticals, like that of clitics and adverbs, indicates that there is a major constituent break between at least the first and second WH words in Serbo-Croatian, Polish, and Czech, while in Bulgarian and Romanian all of the WHs form an indivisible unit. In our analysis the first and only the first WH in the first group of languages has undergone WH movement, and it alone is in SpecCP; while in the second group of languages all of the fronted WHs are in SpecCP and therefore form a constituent.

In addition to the evidence from parentheticals and clitics, there are some further arguments for constituent structure in individual multiple WH-fronting languages, all of which point to the same conclusion, the separate constituent status of the first WH in Serbo-Croatian, Polish, and Czech, but not Bulgarian and Romanian.[14] I will now briefly mention several of these, beginning with an argument from the morphology of definiteness marking in free relatives in Bulgarian. Relative as opposed to interrogative WH words in Bulgarian are marked with a definitizing suffix **-to** (compare (57a-b). In multiple relatives each WH word may be separately marked, as in (57b), but this is not necessary. One **-to** at the end of the WH word sequence is sufficient to mark the whole sequence relative (57c). Note that this **-to** must be suffixed to the

last WH word; as (57d) shows, marking only the first WH word definite is ungrammatical. This strongly suggests that in (57c) **-to** is suffixed to the constituent consisting of the two WH words: **[[koj kakvo]-to]]**

57 a. **Koj kakvo** iska?

who what wants

'**Who** wants **what**?'

b. **Kojto kakvoto** iska ...

who-def what-def wants

'**Whoever** wants **whatever** ...'

c. **Koj kakvoto** iska ...

who what-def wants

'**Whoever** wants **whatever** ...'

d. ***Kojto kakvo** iska ...

who-def what wants

A further argument for the -MFS hypothesis comes from Polish sentences like (58) (from Lasnik and Saito), in which a relative and an interrogative WH word have been fronted in the same clause. Assuming that the head and specifier, Comp and SpecCP, reflect the ±interrogative status of the clause as a whole,[15] both WH words cannot be in the same specifier position in this sentence: a clause cannot be both interrogative and non-interrogative (relative). However, if **który** is in SpecCP and **kogo** is not in SpecCP, nor in Comp,[16] but rather in or adjoined to IP, as is the case under the -MFS analysis of Polish, there is no problem.

58. Spotkałeś mężczyznę, **który kogo** zabił?

met-2s the-man who whom killed

'Whom did you meet the man who killed?'

Although this is a somewhat different case from the multiple questions we have been looking at, it does indicate that some fronted WH words in Polish are not in SpecCP. Clauses

containing a complementizer together with a fronted WH word, like the following example from Lasnik and Saito, make the same point.

59. Maria powiedziała, **że kto** owiedza Janka?

Maria said that who visits Janek

"Who did Maria say visits Janek?"

Not only does the WH word here not agree in interrogativity with its clause, it also follows rather than preceding the Comp position and thus cannot be in SpecCP. The constructions in (58) and (59) are impossible in Bulgarian and Romanian, I do not know if they exist in Czech or Serbo-Croatian.

A third piece of evidence comes from the demonstrative particle **-to** in Serbo-Croatian. This particle is not a clitic. It occurs only in main clauses, and is sentence-initial except in WH questions, where it follows the fronted WH word. Since WH questions are the only main clauses with an overt SpecCP in Serbo-Croatian, this indicates that **-to** follows SpecCP. Significantly, in multiple questions it follows the first WH word (and of course any clitics attached to it), but precedes the second WH word.

60. **Tko** je to **koga** udario? (Browne 1976)

who has that whom hit

"Who hit whom?/ Who was that hitting whom?"

See Browne (1976) for more detailed discussion of this particle and its role in distinguishing two separate WH positions in Serbo-Croatian, one for the first WH word and another for the second and subsequent WH words.

Finally, there may be some evidence available from intonation. Cichocki (1983) notes that in Polish there is an intonation break between the first and second WH words in a multiple question, but not between the second and third or third and fourth, suggesting once again that the first WH word is a constituent separate from the others. Since I do not have data on intonation in the other multiple fronting languages, I do not follow up this line of argument here.

1.4. WH Word Order

1.4.1. Fixed and Free Order

The last area of difference between the two groups of multiple WH fronting languages that I will discuss is the order of fronted WH words, which is relatively fixed in the +MFS languages but not in the -MFS languages. To the extent that it can be attributed to the interplay between the two proposed structures for multiple WH-fronting constructions and independent principles such as the ECP, this difference supports the analysis presented. I begin by giving some contrasting data from Bulgarian and Serbo-Croatian. In Bulgarian, a nominative must precede an accusative WH word, and when a WH indirect object is also present the order of the three WH words must be subject-direct object-indirect object:

61.a. **Koj kogo** vižda?

who whom sees

'**Who** sees **whom**?'

b. ***Kogo koj** vižda?

c. **Koj kogo na kogo** e pokazal? (no other word order possible)

who whom to whom has pointed-out

'**Who** pointed out **whom to whom**?'

In Serbo-Croatian, on the other hand, accusative and nominative WH words can occur in either order, as shown in (62), albeit with some difference in emphasis and appropriate context. All possible orders in combinations with three WH words are grammatical as well; see (63).

62.a. **Ko koga** vidi?

who whom sees

Who sees **whom**?

b. **Koga ko** vidi?

63.a. **Ko** je **šta kome** dao?

Who has what to-whom given?

b. **Ko** je **kome šta** dao?

c. **Što** je **ko kome** dao?

d. **Što** je **kome ko** dao?

e. **Kome** je **što ko** dao?

f. **Kome** je **ko što** dao?

'Who gave what to whom?'

The conditions on the ordering of various types of WH words in Bulgarian are rather complex,[17] but on the whole they match quite neatly the effects of "superiority" in languages like English. These effects have been attributed to properties of WH movement at LF in English (see section 1.4.2). It is, then, a reasonable hypothesis that the difference in word order between the two languages is due to the fact that Bulgarian, but not Serbo-Croatian, has the WH words in the same structural position and the same relation to their traces at S-structure as English has at LF. Given the claim of this paper that Romanian and Bulgarian are opposed to Serbo-Croatian, Polish, and Czech in precisely this way, we predict that Romanian will be similar to Bulgarian, while Polish and Czech will follow the Serbo-Croatian pattern with respect to word order. And indeed, as usual, this is just what we find. The facts of Romanian, Polish, and Czech are presented very briefly below.

The order of WH words in Romanian, like in Bulgarian, is relatively fixed, at least for subjects and objects.[18] Nominative always precedes non-nominative:

64a. **Cine ce** a spus?

who what has said

'Who said what'

b. ***Ce cine** a spus?

what who has said

65a. **Cine cu cine** vorbeşte?

who with whom speaks

'Who is speaking with whom?'

b. ***Cu cine cine** vorbeşte?

with whom who speaks

In Polish multiple questions as in Serbo-Croatian ones word order is quite free, as shown in the following sentence pairs from J. R. Williams (1986b). Note in particular that accusative can precede nominative, in (67b).

66.a. **Kogo komu** przedstawiłeś?

whom to-whom introduced-2S

'**Whom** did you introduce **to whom**?

b. **Komu kogo** przedstawiłeś?

to-whom whom introduced

67.a. **Kto co** robił?

who what did

'**Who** did **what**?'

b. **Co kto** robił?

what who did

The order of WH words within the fronted WH sequence in Czech is also rather free. Once again, note especially that the nominative need not precede other WH words (examples from Toman (p.c.):

68.a. **Kdo kdy koho** pozval, nevím

who when whom invited I-don't-know

'**Who** invited **who when**, I don't know.'

b. **Kdy kdo koho** pozval, nevím

when who whom invited I-don't-know

c. **Koho kdy kdo** pozval, nevím.

whom when who invited I-don't-know

To sum up, WH word order is free in the -MFS languages, but restricted at least to subject > non-subject in the +MFS languages. This word order difference is attributable to the differing structural properties of multiple questions in the two groups of languages, as we shall see below.

1.4.2. Word Order and Locality Principles

In the previous section we saw that in Bulgarian and Romanian, if both a subject and an object WH word are fronted, the subject must precede the object. This is reminiscent of the "superiority"[19] effect in English and other non-multiple-fronting languages (e.g. Dutch: Koopman (1984:224)), the fact that in multiple questions the subject rather than the object must be moved if both are WH phrases:

69 a. I wonder **who** did **what**.

b. *I wonder **what who** did.

In recent treatments (Aoun, Hornstein, and Sportiche (1980), Chomsky (1981), and many later works), this subject-object asymmetry is often subsumed under some version of the ECP, the claim being that at LF the empty category in subject position is properly governed (under some definition of proper government) in (70a) but not (70b), the LF representations of (69a,b) respectively.

70 a. ... [$\underline{\text{what}}_j$ [$\underline{\text{who}}_i$]] e_i did e_j

b. *... [$\underline{\text{who}}_i$ [$\underline{\text{what}}_j$]] e_i did e_j

If, as the +MFS analysis implies, Bulgarian and Romanian have the same structure for multiple questions at S-structure that other languages have at LF, we might reasonably expect the restrictions on WH-word order in +MFS languages to fall under the ECP or a similar locality principle as well.[20]

Some objections to a classical ECP account of these word order facts were presented in Rudin (1985), including, among other problems, the fact that it would not account for superiority effects beyond the simple subject-non-subject asymmetry (e.g. accusative-dative asymmetries as in (61c)), nor for the relative freedom of occurrence of WH phrases containing lexical material other than a simple WH word (compare the Bulgarian examples (71a-b)).

71 a. Ne razbiraš **na koja žena kakăv măž** trjabva

neg understand-2s to which woman what-kind man is-necessary

'You don't understand **what kind of man which woman** needs.'

b. *Ne razbiraš **na kogo koj** trjabva.

neg understand - 2s to whom who is-necessary

'*You don't understand **whom who** needs.'

Both problems have been noted for English and other languages as well (Kayne (1980), E Williams (1986), Comorovski (1986), Contreras (1986), among others), and have caused some (for instance, Aoun, Hornstein, Lightfoot, and Weinberg (to appear), henceforth AHLW) to conclude that some, though not all, superiority effects are unrelated to proper government.

On the other hand, though, recent "split" versions of the ECP, developed by Travis (1984), Jaeggli (1986), Davis (1987), AHLW, and others can account for at least some of the Slavic facts. Various formulations of the split ECP differ, but all have in common that they break up the old ECP, the requirement that empty categories be properly governed at LF, into two separate conditions, a government requirement and a binding requirement, which must both be satisfied, but not necessarily at the same level of the grammar.

For the sake of concreteness, I will adopt here the version of the split ECP proposed by AHLW, with minor adjustments to fit an analysis in which WH words are in SpecCP rather than Comp. WH traces must satisfy two conditions, in this system: head government (72) at PF and a local binding condition (73) (a subcase of Aoun's (1985) Generalized Binding) at LF.

72. An empty element must be governed by a lexical head (at PF).

73. An A' anaphor must be A' bound in its Domain (at LF).

Government is defined as in (74), from AHLW, based on an earlier definition by Aoun and Sportiche.

74. A (X^0) governs B iff all maximal projections dominating A also dominate B and A is dominated either by all maximal projections dominating B or by all maximal projections dominating the maximal projection of B.

The definition of Domain is very slightly modified from that given in AHLW.

75. The Domain for an expression A is the first clause (IP or CP) or NP which contains an accessible SUBJECT for A, where SUBJECT = AGR, [NP,IP], or [NP,NP] (Chomsky

(1981)), and where B is accessible to A iff A is in the c-command domain of B and assigning the index of B to A would violate neither the i-within-i condition nor Binding Condition C (the condition that R-expressions must be A-free).

Finally, it should be noted that all and only indexed items are "visible" at PF, thus (72) applies to indexed empty categories, and an indexed head, including for instance indexed Comp, counts as lexical for (72).

Detailed discussion of how this system applies to the two types of multiple WH-fronting languages must be deferred until after the structure of the WH word sequence in each type has been determined more exactly, in sections 2.2 and 2.3. At that point we will see that the unacceptable non-subject > subject WH word order in +MFS languages is ruled out by (73) and perhaps also (72), while WH-word order is irrelevant to the satisfaction of these conditions in -MFS languages.

2. The Two S-Structures for Multiple WH-Fronting Languages: Toward an Account

2.1. Summary of facts

To sum up what we have seen so far, Bulgarian and Romanian, on the one hand, differ systematically from Serbo-Croatian, Polish, and Czech, on the other hand, in several ways. These are summarized in the table below:

(76)	Bulgarian	Romanian	Serbo-Croatian	Polish	Czech
multiple WH extraction from a clause	✓	✓	*	*	*
WH-island violations	✓	✓	*	*	*
clitics follow first WH word	*	*	✓	✓	✓
parentheticals, adverbs, particles after first WH	*	*	✓	✓	✓
free nom > acc WH word order	*	*	✓	✓	✓

The clustering of properties in the two groups of languages supports the conclusion that all of these properties are to be attributed to a difference in the setting of a single parameter. We have seen above that this parameter corresponds to the descriptive generalization stated in (77):

(77) The Multiply Filled SpecCP Hypothesis:

SpecCP can contain multiple WH words at S-structure in Bulgarian and Romanian (+MFS languages), but only one in Serbo-Croatian, Polish, and Czech (-MFS languages).

Although both types of languages move all WH phrases to the beginning of the clause, they do not place them in the same clause-initial position, and the resulting structures for multiple questions and other multiple WH constructions are different in +MFS and -MFS languages. Languages of the first type have a structure like (78a) (=(2c)), while those of the second type have one like (78b) (=(2d)) for multiple questions at S-structure.

78 a. $[_{CP}\ [_{SpecCP}$ wh wh wh$]\ [_{IP}$ ... $]]$ +MFS languages (Bulgarian, Romanian)

b. $[_{CP}\ [_{SpecCP}$ wh$]\ [_{IP}$ wh wh... $]]$ -MFS languages (Serbo-Croatian, Polish, Czech)

But several important questions remain. What is the internal structure of SpecCP in +MFS languages? Exactly what position do the WH words occupy within IP in the -MFS languages? And is it possible to derive (77) from some deeper principle that would allow us to integrate the multiple WH-fronting languages into a more general typology of WH movement? It is to these questions that I now turn. Sections (2.2) and (2.3) briefly treat the structure of the WH sequence in +MFS and -MFS languages, respectively, and (2.4) links (77) to a proposal that the level(s) at which adjunction to SpecCP is permitted are subject to language specific variation, based on the Condition on Comp Adjunction proposed by Adams (1984).

2.2. The Structure of SpecCP in +MFS Languages

In this section I focus on the precise structural position of fronted WH words in the +MFS languages. Up to this point we have seen a number of arguments that all of the WH words are in SpecCP at S-structure in Bulgarian and Romanian, but minimal attention has been given to questions relating to the internal structure of multiply WH-filled SpecCP. What, if any,

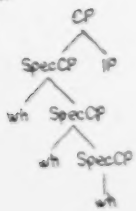
hierarchical structure SpecCP has is obviously important for determining how principles of binding and government will apply to +MFS languages.

There are several possible structures for a single SpecCP constituent containing multiple WH words. One is a flat structure like (79), in which SpecCP dominates an arbitrary number of (presumably base generated) nodes which can be filled by WH movement. This is parallel to the multiply filled Comp structures assumed for Bulgarian by Rudin (1986) and for Romanian by Comorovski (1986)

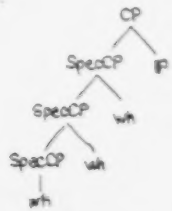
79.

Another possibility is that WH words are adjoined to the left or right of SpecCP, as I have assumed in the first part of this article, resulting in a structure like (80a) or (80b), respectively.

80.a.



b.



I argue here for structure (80b). This analysis involves three semi-independent components, which will be discussed in turn:

A. A single WH-phrase is substituted into the SpecCP position, which is empty at D-structure.

B. Subsequently, an additional WH phrase or phrases may be adjoined to SpecCP.

C. The adjunction in (B) is to the right.

An assumption underlying the following discussion is that the structure of multiply WH-filled SpecCP at S-structure in the +MFS languages is the same as that of multiply WH-filled

SpecCP at LF universally.[21] That is, I assume that no restructuring of SpecCP takes place between S-structure and LF in +MFS languages, although nothing crucial will hinge upon this. Following Chomsky (1986), I assume that substitution of a maximal projection into specifier position is one of the possible types of movement, and that syntactic WH movement in English, as well as in non-multiple questions in +MFS languages, as in (81), is an instance of this type.

81. $[_{SpecCP}$kakvo$_i]$ pravi Ivan t_i (Bulgarian)

what does Ivan

'What is Ivan doing?'

This follows directly from the adoption of the system of phrase structure in Chomsky (1986). It is only a very small step from this to the further assumption that one of the WH phrases in a multiple question is substituted into SpecCP, in Bulgarian and Romanian as in English, i.e. (A) above.

Component (B) of the analysis is somewhat less obvious. Chomsky (1986) does not state what position multiple WH phrases would occupy at LF in his system; in fact, he explicitly declines to detail "the specific mechanisms of LF movement of WH-in-situ" (p.49). However, nothing in the Barriers model prevents adjunction of WH phrases to SpecCP: SpecCP is XP and is not an argument position, so it should be a permissible adjunction site. I take an adjoined structure to be preferable to a flat structure like (79) on theoretical grounds, since it allows us to restrict movement to two highly constrained types: substitution into an empty node, and adjunction, which Chomsky limits to non-argument XP. Tree (79) would require "substitution" into a node that already contained one or more WH phrases. Furthermore, it is possible with an adjoined structure to give a simple account of subject-object asymmetries based on the split ECP (see above), as I will now demonstrate.[22]

Recall that a subject WH phrase must precede a non-subject in multiple questions in Bulgarian and Romanian:

82.a. **Koj kakvo** pravi? (Bulgarian)

who what does

'**Who** is doing **what**?'

b. ***Kakvo koj** pravi?

what who does

'**What** is **who** doing?'

I propose that the single WH which is substituted into SpecCP becomes the head of SpecCP and its index percolates to SpecCP. By specifier-head agreement (Chomsky (1986)), SpecCP passes its index to Comp, the head of CP. This has the effect of coindexing Comp with a fronted WH phrase, in a fashion analogous to the Comp-indexing mechanism proposed by Aoun, Horstein, and Sportiche (1980) and adopted in revised form by Lasnik and Saito (1984) and others.[23] A multiple question like (82a) has the indexed structure (83), assuming that WH words are adjoined to the right of SpecCP:

83. $[\text{SpecCP}_i\ [_{\text{SpecCP}}\text{koj}_i]\ \text{kakvo}_j]\ [\text{Comp}_i][_{\text{IP}}\text{t}_i \ldots \text{t}_j \ldots]$

The indexed Comp, an X^0 category, counts as a visible head at PF in the AHLW system of proper government I am assuming here (outlined above; section 1.4.2). Comp thus licenses t_i by head governing it. The object trace of course is head-governed by V. In (82b), with structure (84), Comp is coindexed with the object, not the subject WH phrase, so the subject trace appears not to be head-governed and the sentence to be ruled out:

84. $[\text{SpecCP}_j\ [_{\text{SpecCP}}\text{kakvo}_j]\ \text{koj}_i]\ [\text{Comp}_j][_{\text{IP}}\text{t}_i \ldots \text{t}_j \ldots]$

An alternative is that the subject trace in (84) actually is head governed, by INFL. INFL is a head, and is coindexed with the subject of its clause; if, as has been claimed for Spanish (e.g. Chomsky (1981)), lack of subject-object asymmetries in multiple questions correlates with free inversion and proper government by INFL, it might be expected that in Bulgarian and Romanian, which do have Romance-type free inversion, INFL should be able to properly govern (i.e. head govern) the subject position. The choice between these alternatives is not critical for the account of word order in the +MFS languages, since sentences like (82b) will be ruled out at LF in any case, as we shall see in a moment.[24] But in the discussion of the -MFS languages it will become clear that there are reasons to prefer the analysis in which INFL does head govern a subject trace.

Let us turn now to the local binding requirement for anaphors at LF. In (83), which is the LF as well as the PF structure for (82a), t_i is A'-bound by the indexed Comp. The object trace, t_j, has no accessible SUBJECT, hence no Domain, since coindexing it with either AGR or the subject NP would violate Condition C of the Binding Theory. It therefore need not be bound, and the binding requirement is satisfied. In (82b), on the other hand, the binding requirement is not met. The subject trace, t_i in (84), has AGR as its accessible SUBJECT, and must therefore be A'-bound in CP, its Domain. But it is not bound either by Comp, which is not coindexed with it but rather with the object trace, nor by the WH word **koj**, which does not c-command it. Thus both parts of the split ECP, head government at PF and local binding at LF, are satisfied by (82a), but (82b) fails to satisfy at least the LF condition, given a structure in which the leftmost WH phrase is the head of SpecCP, as is assured by the adjunction analysis I am proposing.

The reasons for postulating adjunction of WH phrases to the right rather than the left of SpecCP should now be clear. If adjunction proceded to the left, the word order facts should be exactly the opposite of what they in fact are: the subject WH phrase should be restricted to the rightmost, rather than the leftmost, position in the WH-word group, as the S-, PF, and LF structure (85), not (83), would license a subject WH trace:

85 $[_{SpecCP_i}$ kakvo$_j$ $[_{SpecCP}$koj$_i$$]]$ $[Comp_i][_{IP}\, t_i \ldots t_j \ldots]$

Given the assumption that syntactic and LF movement to SpecCP are parallel, this suggests that LF adjunction of WH phrases to SpecCP in languages like English is to the right too, i.e. that (86b) rather than (86c) is the correct LF structure for (86a), although this difference in directionality does not crucially affect any analysis of English that I am aware of.

86.a. Who said what?

b. [[who] what] said

c. [what [who]] said

Aoun, Hornstein, and Sportiche, in their original discussion of adjunction to Comp, assumed adjunction to the right, but later analyses have generally assumed adjunction to the left.

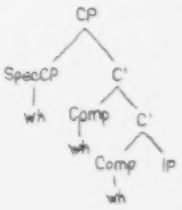
2.3. Adjunction to IP in -MFS Languages

I turn now to the details of WH position in the -MFS languages, Serbo-Croatian, Polish, and Czech. In the first part of this article I argued that multiple questions in these languages, unlike in Bulgarian and Romanian, have only one WH phrase in SpecCP at S-structure. This single WH phrase is presumably substituted into the empty specifier position in both single and multiple questions, just as it is in English, in the +MFS languages, and in all other languages with syntactic WH movement. The remaining WH phrase or phrases, however, although fronted, are not in SpecCP, but in some other position.

Several possibilities exist for what this position might be; in fact, at least three structures compatible with the general analysis just outlined have been put forward in the literature. Toman (1981) proposed a structure with each WH word in a separate Comp, as in (87a), for Czech and Polish; in the X-bar system employed here this might translate to something like (87b):

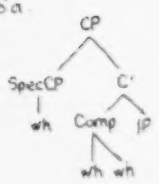
87.a.

b.



Cichocki (1983), based on evidence from parenthetical and clitic placement (cited in section 1.3 above) that the second and third WH words in a Polish triple question may form a constituent, suggests that the WH words other than the first one are in a second Comp ("$Comp_2$") which differs from the other Comp ("$Comp_1$") in not being an extraction position and in accomodating multiple WH words. To adapt this proposal to the current X-bar framework we might identify $Comp_1$ with SpecCP and $Comp_2$ with Comp, expanded in either of the ways shown in (88).[25]

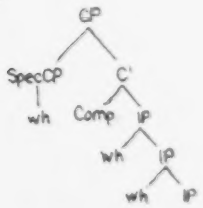
88a.



b.

Finally, Lasnik and Saito (1984) suggest a structure for Polish in which each of the non-initial WH words is adjoined to S. In the current framework this would be adjunction to IP, producing a tree like (89). It is this structure that I will argue is the correct one.

89.



The main difference between (89) and the other structures is that in (87-88) WH phases other than the initial one are in Comp, while in (89) they are not. This is an important distinction in light of the patterns of cooccurrence of WH words with complementizers in the -MFS languages. We have seen that a complementizer can cooccur with and precede a WH word.

90. Maria myśli, **że co** Janek kupił? (Polish)

Maria thinks that what Janek bought

'What does Maria think that Janek bought?'

However, no other combination of WHs and complementizers is possible, that is, we do not find WH + complementizer (e.g. in Polish ***co że** 'what that'), nor, in multiple questions, WH + complementizer + WH (e.g. ***kto że co** 'who that what'). The facts of the other -MFS languages are analogous.[26] The possible and impossible combinations and their structures according to hypothesis (89) are listed in (91):

91. WH WH $[_{SpecCP}WH\ ][_{Comp}e\ ][_{IP}WH\ [_{IP}\ \ldots\ ]]$

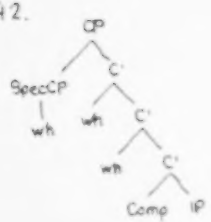
comp WH	$[_{SpecCP}e\ ][_{Comp}comp\ ][_{IP}WH\ [_{IP}\ _\ ]]$
*WH comp	$*[_{SpecCP}WH\ ][_{Comp}comp\ ][_{IP}\ [_{IP}\ _\ ]]$
*WH comp WH	$*[_{SpecCP}WH\ ][_{Comp}comp\ ][_{IP}WH\ [_{IP}\ _\ ]]$

A clear generalization emerges from this array. It is apparent that the -MFS languages, like modern English, obey a form of the "doubly filled Comp filter": either SpecCP or Comp must be empty. This simple account of the distribution of complementizers depends on accepting (89) as the structure of multiple questions in the -MFS languages, since under either (87) or (88), the generalization would not hold, SpecCP and Comp both being filled in multiple questions.

Another argument against the second WH being in Comp, based on the cooccurrence of relative and interrogative WH phrases, has already been sketched in connection with example (58) above.

Furthermore, the structures in (87-88) present some additional problems. The primary rationale for (88), the claim that the second and third WHs form a constituent, receives no support in Czech or Serbo-Croatian, as we have already seen (section 1.3). Structure (88a) is undesirable for theoretical reasons as well: the two WHs dominated by Comp could not be placed there by either of the two standard types of movement, substitution or adjunction.[27] And (87b) is similarly awkward: it would require an "adjoined" structure with an appropriate number of Comp positions to be present at D-structure, so that WH phrases could be substituted into them. While base generation of adjoined structures is not impossible, they are normally created by movement. Adjunction of WH directly to C', as in (92), would sidestep this drawback, but at the expense of creating further problems, both empirical and theory-dependent. Firstly, it is adjunction to a non-maximal category, which is ruled out by Chomsky (1986). And secondly, it predicts that any complementizer should follow all fronted WH words, which as we have just seen, is false.

(92.



Structure (89), with WH words adjoined to IP, avoids all of these problems, while still placing the non-initial WH words in multiple questions in an A' position other than SpecCP. The fact that each WH phrase A'-binds its trace is crucial for our account of the lack of subject-object superiority effects in Serbo-Croatian, Polish, and Czech. Recall that, unlike in the +MFS languages, in the -MFS ones WH word order is free. Thus both (93a) and (b) are grammatical, and both must satisfy both parts of the split ECP.

93.a. **Ko koga** vidi? (Serbo-Croatian)

who whom sees

b. **Koga ko** vidi?

whom who sees

The PF (and S-) structure of these is shown in (94a-b), respectively. PF is the level at which the head-government condition must be met.

94.a. $[SpecCP_i\ ko_i\ ][Comp_i][_{IP}\ koga_j\ [_{IP}\ t_i \ldots t_j \ldots\ ]]$

b. $[SpecCP_j\ koga_j][Comp_j][_{IP}\ ko_i\ [_{IP}\ t_i \ldots t_j \ldots\ ]]$

In (99a), $\underline{t}_i$ is head governed by the coindexed Comp, and $\underline{t}_j$ by V, so (93a) is acceptable at PF. (94b) is slightly more problematical. Here Comp head governs $\underline{t}_j$, but it is not immediately obvious what governs $\underline{t}_i$, the subject trace. There are two alternatives: either $\underline{t}_i$ is head governed by INFL, as discussed for the +MFS langauges above, or else the definition of head government could be modified in such a way that the WH word **ko** adjoined to IP could serve as the head governor of its trace. The latter option seems undesirably ad hoc, since **ko**, although lexical, is not in any normal sense a head. I therefore tentatively adopt the position that INFL, which is a

head and which counts as a lexical category because of its coindexation with the subject NP, head governs a subject trace at PF in both the -MFS and the +MFS languages discussed in this article.[28]

At LF, the WH phrase(s) adjoined to IP move to SpecCP. So (95a-b) are the LF structures of (93a-b), respectively:

95 a. [SpecCP$_i$ [ko$_i$] koge$_j$][Comp$_i$][$_{IP}$ t$_j$ [$_{IP}$ t$_i$ ... t$_j$ ...]

b. [SpecCP$_j$ [koge$_j$] ko$_i$][Comp$_j$][$_{IP}$ t$_i$ [$_{IP}$ t$_i$ ... t$_j$ ...]

Object WH-traces are not subject to the local binding requirement at LF, since they have no Domain, coindexation with either AGR or [NP,IP] being a Condition C violation. The trace $\underline{t}_i$ in subject position in both (95a) and (b) has CP as its Domain, and in both cases it is A' bound within that Domain: by the indexed Comp (and/or SpecCP) in (95a) and by the trace adjoined to IP in (95b). The trace adjoined to IP is not A' bound in either (95a) or (95b). However, like the object trace, it has no accessible SUBJECT, hence no Domain, hence does not fall under the local binding requirement.[29] So both (95a) and (95b) are legitimate LF structures; unlike in the +MFS languages neither word order in (93) is ruled out at LF.

Finally, one possible objection to structure (89) should be noted. Chomsky (1986) disallows adjunction of WH phrases to IP, for reasons internal to his "Barriers" treatment of subjacency and related phenomena. (Other elements, such as quantifiers, do adjoin to IP.) This need not be of great concern here, since I am not assuming the Barriers account of these matters. Nonetheless, it is worth considering one last alternative which would avoid adjunction to IP, namely, adjunction to VP. A question like (96a) would have the structure shown in (96b) rather than (96c), where e is the null subject of IP.

96 a. **Kogo komu** przedstawiłeś? (Polish)

whom to-whom introduced-2s

"**Whom** did you introduce **to whom**?"

b. [$_{SpecCP}$kogo][$_{IP}$ e [$_{VP}$ komu [$_{VP}$ przedstawiłeś]]]

c. [$_{SpecCP}$kogo][$_{IP}$ komu [$_{IP}$ e [$_{VP}$ przedstawiłeś]]]

But this possibility is straightforwardly ruled out by multiple questions with an overt subject. The following Polish example is typical for all the -MFS languages: whether the subject is a pronoun or a nonpronominal NP, it cannot precede the second Wh phrase.

97a. **Kogo komu** Jan/on przedstawił?

whom to-whom Jan/he introduced

'**Whom** did Jan/he introduce **to whom**?'

b. ***Kogo** Jan/on **komu** przedstawił?

whom Jan/he to-whom introduced

I take it as established, then that (89) is the correct structure for multiple questions in the -MFS languages.

2.4. Adjunction to SpecCP at S-structure, LF, and PF

We have seen by this point that the differences between the two groups of multiple-WH-fronting languages reduce essentially to the fact that WH phrases adjoin to SpecCP at S-structure in the +MFC but not the -MFC languages (putting aside for the moment the issue of IP adjunction). Given the universality of WH Raising at LF (see for instance Aoun, Horstein, and Sportiche (1980), Huang (1982), Chomsky (1986:50)), this in turn reduces to a difference in the level at which adjunction to SpecCP can apply. In both types of languages WHs adjoin to SpecCP; the only difference is that in +MFS languages like Bulgarian adjunction takes place at or before S-structure, while in -MFS languages like Serbo-Croatian it does not occur until LF. A proposal to account for certain properties of WH movement and multiple interrogation in several non multiple WH-fronting languages in terms of language specific differences in the levels at which adjunction can occur has been put forward by Adams (1984). In this section I demonstrate that her proposal, with minor modifications, can be extended to cover the multiple WH-fronting languages as well.

Adams' suggestion consists of a prohibition on adjunction to Comp at specific levels of the grammar; languages can differ in what, if any, levels (98) applies at.

98. Condition on Comp Adjunction (CCA) (Adams (1984))

*[$_{Comp}$ α Comp]

(i.e. nothing may be adjoined to Comp (at level X of the grammar))

To conform to the decision to treat multiple WH movement as adjunction to SpecCP, let us adopt instead a condition on SpecCP adjunction:

99. Condition on SpecCP Adjunction (CSA)

*[$_{SpecCP}$ Or SpecCP]

(nothing may be adjoined to SpecCP)

Adopting (99) rather than (98), along with the assumption that WH words are in SpecCP, not Comp, does of course induce some changes in what will count as violations of the condition.[30] However, all of Adams' important insights are preserved. These insights have to do with the relation between multiple questions and WH-island violations, both of which involve WH-adjunction to SpecCP at some level.[31] Adams proposes that, depending on the level or levels at which CCA applies, a language may have both multiple questions and WH-island violations, or only one or the other, or neither. Italian, as described by Rizzi (1982), has no multiple questions: the CCA holds at LF. However, Italian does permit certain kinds of WH-island violations, indicating that the configuration $WH_i \ldots [_{Comp}\ t_i\ [_{Comp} WH_i]]$ is permitted at S-structure: CCA does not hold at S-structure. (Adams suggests that the trace t_i in this structure is invisible to the CCA at LF iff it is a relative operator, thus accounting for the fact that only questioning, not relativization, produces WH island violations. We will see below that this suggestion is problematical.) English has the opposite distribution. Multiple questions (with WH in situ) do occur, so CCA does not hold at LF, but WH-island violations do not occur, so CCA does hold at S-structure. In modern Irish the CCA holds at both LF and S-structure: the language allows neither multiple questions nor WH-island violations (McCloskey (1979)). As a language in which CCA does not apply at either S-structure or LF, Adams cites the variety of Spanish described by Torrego (1984), which permits both multiple questions and WH-island violations. Spanish does obey the CCA at PF, however, under the assumption that WH-trace is not visible at PF, since overt multiply filled Comps do not occur.

This analysis of the distribution of multiple questions and WH-islands in terms of application of the CCA at LF, at S-structure, at both, or only at PF works equally well under the revised Condition on SpecCP Adjunction. In fact, the CSA avoids one problem of the CCA, namely, the role of complementizers in the system. The CCA predicts, apparently falsely, that languages like Middle English, in which a WH word and a complementizer may cooccur, should permit multiple WH adjunction to Comp at PF. (100a) and (100b) have the same structure at PF even if one assumes the neutral complementizer need not be present at earlier levels.

100 a. $[_{Comp}$WH $[_{Comp}$that $]]$

b. $[_{Comp}$WH $[_{Comp}$ WH $]]$

Under the SpecCP analysis of WH Movement, however, no such prediction is made, the presence of a complementizer is irrelevant to the structure of SpecCP, and the fact that (101a) occurs does not imply that (101b) is possible at that level.

101 a. $[_{SpecCP}$WH $]$ $[_{Comp}$that $]$

b. $[_{SpecCP}$WH $[_{SpecCP}$WH $]]$ $([_{Comp}])$

Adams briefly mentions the existence of multiple WH-fronting in Polish and Romanian and suggests tentatively that such languages might represent the option of CCA not applying at any level of the grammar. As I have demonstrated in detail above, these two languages behave quite differently with respect to WH adjunction to SpecCP. Adams' conjecture turns out to be correct for Romanian (and Bulgarian) but not for Polish and the other -MFS languages.

The +MFS languages do allow multiple WH questions, which indicates that CSA does not hold at LF. They also allow WH-island violations, as we saw in section (1.2), so CSA does not hold at S-structure either. The possibility of multiple WH extraction from a clause (section 1.1) provides further evidence that CSA is not in force at S-structure, since multiple extraction produces S-structures with WH-trace as well as WH phrases adjoined to SpecCP.

102. $[[_{SpecCP}[_{SpecCP}$WH$_i$ $]$ WH$_j$ $]$ ... $[_{CP}[_{SpecCP}[_{SpecCP}t_i$ $]$ t$_j$ $]$ ... t$_i$ t$_j$ ... $]]$

Furthermore, CSA does not hold at PF in Bulgarian and Romanian. There is no reason to believe that fronted multiple WH words in these languages are not adjoined to SpecCP at PF, just as

hey are at S-structure. They can even cooccur with a neutral complementizer (cf (101b) bove), in emphatic questions like (103):

103. Kazaha, **koj kakvo** če e vidjal? (Bulgarian)

said-3p who what that has seen

'They said that **who** saw **what**?'

iven the rather marginal and echo-like character of this construction, I hesitate to drew strong onclusions from it, however, it nonetheless seems quite clear that the +MFS languages do not obey he CSA, at any level.

The -MFS languages also do not obey CSA at LF, since they do have multiple questions. owever, unlike the +MFS languages, they do observe it at S-structure, since WH-islands are not iolated. (And as we have seen, there are several other types of evidence that only one WH word is n SpecCP at S-structure as well.) It is less clear whether the CSA holds at PF in these languages. n Serbo-Croatian there is one construction in which two fronted WH words may precede a omplementizer, suggesting that adjunction to SpecCP does occur at PF.

104. Nemamo **šta kome** da damo.

don't-have-1p what to-whom that give-1p

'We don't have **anything** to give to **anyone**'.

However, this construction is unlike other WH constructions in some ways, including the act that the WH words are interpreted as indefinite, not interrogative, pronouns, so it is unclear ow much weight to give this evidence. I do not know of evidence for adjunction to SpecCP at PF in olish or Czech.[32] If varieties of Czech actually exist that allow true WH-island violations (see ection 1.3), they provide theory-internal reason to believe adjunction is disallowed at PF at least n these dialects. These varieties of Czech would presumably be like Spanish, in that CSA does not old at S-structure, but multiple lexical WHs in SpecCP at S-structure (as opposed to one WH hrase and one trace) are ruled out by the CSA applying at PF.

One element of Adams' proposal which turns out to be untenable is the notion that nterrogative and relative operators are distinguished by the CCA (or CSA) at LF, and that this is

what accounts for the fact that relative but not interrogative WH phrases can be extracted from WH islands in Italian. As we have seen (section 1.2), Bulgarian and Romanian exhibit a similar relative-interrogative asymmetry, although the CSA does not apply at all in these languages. And the same type of asymmetry has been noted for Scandinavian languages (Maling (1978)), Hungarian (Horvath (1981)), Polish, where questioning gives more severe island violations than relativization (Cichocki (1983)), and even English, where many speakers find (105a) considerably better than (105b), although none of these languages obey the CSA at LF.

105 a. ?Bill was the one who we all wondered who would ever marry.

b. *Who did you wonder who would ever marry?

I therefore assume that all empty operators (not just relative operators) are invisible to the CSA at LF and that the very common relative-interrogative asymmetry is due to independent factors.

The levels at which the CSA holds in various languages are summarized in the table below. Parentheses around PF markings indicate that this has not been adequately studied. As noted above, the -MFS languages may differ from others of type 3 in not respecting the CSA at PF, but this is far from clear.

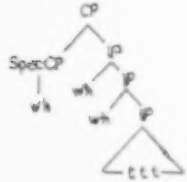
106.

CSA applies at:	PF	S-structure	LF
1. +MFS languages: Bulgarian, Romanian, (Yiddish)	-	-	-
2. Spanish (varieties of Czech??)	✓	-	-
3. -MFS languages: Serbo-Croatian, Polish	(-)		
Czech		✓	-
English, French, Chinese	(✓)		
4. Italian	(✓)	-	✓
5. Modern Irish	(✓)	✓	✓

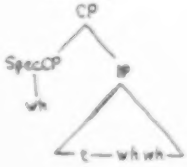
2.5. Some Further Issues

It is noteworthy that the grouping of languages in table (106) does not correspond in as direct a way as one might suppose to the S-structure position of WH words in multiple questions, the property with which we began this study. Although the +MFS languages all have the same CSA settings, languages with one WH phrase in SpecCP at S-structure are distributed over four separate CSA configurations. In addition, the languages under 3, those which obey CSA at S-structure but not at LF, are very diverse, having at least the range of variation in S-structure WH positions shown in (107):

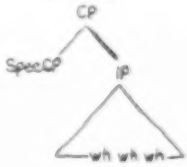
107 a. Serbo-Croatian, Polish, Czech



b. English[33] (French)



c. Chinese (French)



Obviously, some further factors are involved in accounting for the existing range of structures for multiple WH constructions and related matters. The range of S-structures possible with the same settings of CSA raises several issues, some of which I will treat here, leaving a full account of others for further research. These are questions having to do with optionality and obligatoriness of various kinds of WH movement: Why is syntactic WH movement (substitution) to SpecCP optional in French, but obligatory in other languages, and disallowed in the Chinese type? Is movement to non-SpecCP A' positions, as in (107a), obligatory, and if so, why? Why do WH words in the -MFS languages (as well as +MFS) need to be in A' positions at S-structure? Finally, why is adjunction to SpecCP required at S-structure in the +MFS languages? Clearly it is to be hoped that independent conditions will provide answers to at least some of these questions.

One factor which will probably have to be stipulated for each language is the level(s) at which WH movement applies. A given language may have only LF WH movement (the Chinese type), only syntactic WH movement (Bulgarian and Romanian), or both. The fact that there is no

LF WH movement in the +MFS languages means that WH-in-situ does not occur: in both Romanian and Bulgarian all WH words must be fronted at S-structure to make a grammatical multiple question. A sentence in which one of the WH words has failed to front is acceptable only as an echo, with stress and rising intonation on the final WH word (* marks echo status):

108 a. **Cine ce** a spus. (Romanian)
who what has said
'**Who** said **what**?'

b. *__Cine__ a spus **ce**?
'**Who** said ***what***?'

c. *__Ce__ a spus **cine**?
'**What** did ***who*** say?'

109. a. **Koj kogo** e vidjal ? (Bulgarian)
who whom has seen
'**Who** saw **whom**?'

b. *__Koj__ e vidjal **kogo**?
'**Who** saw ***whom***?'

c. *__Kogo__ e vidjal **koj**?
'**Whom** did ***who*** see?'

Furthermore, this means that the CSA must not apply at S-structure if Romanian or Bulgarian is to have multiple questions. A language which had no LF WH movement and which did not allow adjunction to SpecCP at S-structure would have no way to achieve adjunction to SpecCP at LF, and thus could not have any multiple WH constructions.

The level at which WH movement takes place has other consequences too. Following Aoun, Hornstein, and Sportiche (1980) and Huang (1982), I assume that subcategorization is checked at S-structure in languages that have syntactic WH movement, and at LF in languages that do not. Thus in a language like English, which has syntactic WH movement, the CP complement to a verb like **wonder**, which subcategorizes for a +WH clause, must be headed by a +WH Comp at S-

structure, while this is not required until LF in a language like Chinese. Let us suppose that there are two ways for Comp to be marked +WH, and the difference between them is reflected in the optionality of WH movement in French. French has syntactic WH movement, but unlike English it does not require a WH word in SpecCP in all questions: compare English (110b), possible only as an echo, to French (111b), which is a normal question.

110 a. Who did she see?

b. *She saw who?

111 a. Qui a-t-elle vu?

b. Elle a vu qui?

An account of this proposed by Aoun, Hornstein, and Sportiche is that in French Comp can be intrinsically marked +WH, while in English Comp is +WH only if it contains a WH phrase.[34] This account can be preserved within the present analysis, in which WH phrases are in SpecCP, not in Comp, by saying Comp is marked +WH either intrinsically (in French) or through coindexation with a WH phrase (in English). As we have seen, the index of a WH phrase in SpecCP percolates to SpecCP and then, by Spec-Head agreement, to Comp. Comp in configuration (112) is +WH.

112. [$SpecCP_i$ WH_i] $Comp_i$

Thus in English, but not French, SpecCP must contain a WH phrase at S-structure in order for Comp, and thus the clause as a whole, to count as +WH for subcategorization purposes.

This same notion of +WH marking also accounts for the shape of multiple questions in English and French. At LF, WH phrases are "attracted" only to a +WH SpecCP, as originally suggested by Chomsky (1973). In English, this means that WH in situ is possible only if SpecCP contains a WH phrase at S-structure to mark it +WH, as in (113a); (113b) is an echo. But in French, since SpecCP can be +WH by agreement with the intrinsically +WH Comp of its clause, all of the WHs in a normal, non-echo multiple question can be in situ:

113 a. **What** did she say **to whom**?

b. *She said **what to whom**?

c. Elle a dit **quoi à qui**?

Intrinsic +WH marking is apparently available in Polish too, since movement at LF can be to an empty SpecCP. Recall that WH phrases cannot be extracted from finite clauses in the syntax. **Co** 'what' in (114) is adjoined to the lower IP at S-structure, but moves to SpecCP of the matrix clause at LF.[35] Thus the difference in Comp marking cuts across the multiple fronting-non multiple fronting distinction.

114a. Maria myśli, że **co** Janek kupił
Maria thinks that what Janek bought
What does Maria think Janek bought?'

b. LF: $[_{SpecCP}co_i]$ Maria myśli $[_{CP}$ że $[_{IP}$ t_i $[_{IP}$ Janek kupił]]]

To sum up the discussion so far, then, the differences among languages in whether WH substitution into SpecCP is optional, obligatory, or impossible at S-structure can be accounted for by differences in the level at which WH movement applies, plus the existence or lack of intrinsic +WH marking of Comp. It remains to discuss the issue of how to account for IP-adjunction, and whether or not it is obligatory in the -MFS languages.

The answer to the latter question is that the -MFS languages differ among themselves. In Polish and Czech, WH-in-situ exists only with echo interpretation. In (115)-(116), only the (a) versions, with all WHs fronted, are true multiple questions.[36]

115a. **Kto kiedy** wyjechał? (Polish)
who when left
'**Who** left **when**?'

b. *Kto wyjechał **kiedy**?
who left when

116a. **Kdo koho** viděl? (Czech)
who whom saw
'**Who** saw **whom**?'

b. *Kdo viděl **koho**?

who saw whom

In Serbo-Croatian, however, non-echo interpretation of WH in situ, as in (117b), is relatively acceptable

117a. **Ko** je **koga** video?

who has whom seen

'**Who** saw **whom**?'

b. **Ko** je video **koga**?

who has seen whom

It seems, then, that in Serbo-Croatian the English pattern of WH movement (one WH substituted into SpecCP in the syntax; the rest not moving until LF) is available as an option, while in Polish and Czech all WH words must be in A' positions (in SpecCP or adjoined to IP) at S-structure. It would be desirable, of course, to derive this difference from some more general principle, rather than simply stipulating it. I do not at present have a well-worked-out version of such a principle. However, one possibility is that it has to do with constraints on LF WH movement. If Polish allows LF movement only from A' positions, and English allows it only from A positions, this would explain why Polish must place all WH phrases in A' positions at S-structure by adjoining them to IP, and why English does not. That is, it would explain why Polish but not English is a multiple WH fronting language. Serbo-Croatian would allow LF movement from both A and A' positions and would therefore have optional IP adjunction.[37]

3. Concluding Summary

My goals in this article have been to describe two types of multiple WH-fronting languages and to integrate them into a general typology of WH Movement and multiple WH constructions. In the first part of the article I demonstrated that in spite of their superficial similarity, the Slavic and East European languages which normally place all WH words at the beginning of the clause fall into two distinct groups with different structures for multiple WH constructions. One group, which includes Bulgarian and Romanian, places all of the WH words of a multiple question in SpecCP at S-structure, while the second group, including Polish, Czech, and

Serbo-Croatian, has only one WH word in SpecCP. I have referred to these two groups as the +MFS (Multiply Filled Specifier) and -MFS languages, respectively. The difference in S-structure accounts for systematic differences in extraction possibilities for multiple WH words, island effects, clitic position and occurrence of parentheticals and other material within the fronted WH-word sequence, and strictness of word order in multiple WH constructions in the two types of languages.

The second part of the article attempts to locate the two types of multiple WH-fronting languages within the broader range of possible structures for multiple questions and to provide some account of this range. As a preliminary to this discussion, the two multiple fronting structures are spelled out in more detail. For the +MFS languages I argue for a hierarchical structure within SpecCP, such that non-initial WHs are adjoined to the right of the specifier position, while the initial one is the head of SpecCP, and its index percolates to SPec CP and, by agreement, to Comp. Assuming that adjunction to SpecCP is the same at LF as at S-structure, I suggest that the same right-adjoined structure is present universally at LF. For the -MFS languages, I argue for a structure in which each non-initial WH is adjoined to IP. Among other advantages, these structures make it possible to bring the word order differences between the two types of languages under a version of the split ECP, specifically a requirement that WH traces be locally bound at LF.

Sections 2.4 and 2.5 present several factors which, taken together, account for much of the crosslinguistic variation in WH constructions. One of these, the Condition on SpecCP Adjunction, holds that languages differ in the levels at which they permit adjunction to SpecCP. Other factors considered are the level(s) at which WH movement applies, whether Comp can be intrinsically +WH, and whether LF WH movement is from A or A' positions. Further work may well show some of these to be derivable from more basic parameters.

In closing, I would like to touch briefly on the important issue of learnability. How does a child learning a multiple WH-fronting language come to know whether it is a +MFS or a -MFS

one? More generally, how does any child know where its language fits in the range of types available for WH constructions, particularly multiple questions?

Following Adams (1984), I assume that the unmarked value for the CSA is that it applies at all levels. The child thus needs positive evidence in the form of multiple WH questions to conclude that his or her language allows adjunction to SpecCP at LF, and in the form of WH island violations or multiple extraction to conclude that it does so at S-structure. Evidence for SpecCP adjunction at PF could include multiple WH phrases preceding a complementizer, or perhaps "second position" clitics following multiple WHs, if cliticization is sensitive to PF. Without such evidence at each level, the language learner assumes adjunction to SpecCP is impossible. This part of the system is thus definitely learnable, and a child presented with evidence for SpecCP adjunction at all three levels would have all the information necessary to know he or she was learning a +MFS language.

Similarly, positive evidence is available for the level at which WH movement operates. In the absence of overtly moved WH phrases the learner assumes no syntactic WH movement. In the absence of WH in situ the learner assumes no LF WH movement from A positions. And in the absence of a -MFS pattern (see below) the learner assumes no LF movement from A' positions. If both moved and in-situ or "-MFS pattern" WH phrases are found, the learner concludes that WH movement applies at both levels.

By "a -MFS pattern" I mean multiple WH fronting with no subject-object word order asymmetry, clitics[38] and parentheticals following the first WH word, and no multiple extraction. The evidence from clitics would be especially useful for a learner, if available, since they would be found in short, high-frequency sentence types. This -MFS pattern allows the child to conclude that he or she is learning a language with LF movement from A' positions, i.e. a -MFS language.

NOTES

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[1]Assuming the X-bar system of Chomsky (1986)), in which S = IP (INFL phrase), S' = CP (Comp phrase), and WH Movement is to the specifier position of CP. See below for some discussion.

[2]See part 2 of this paper. Contreras (1986) claims that it is also possible to account for the superiority facts at S-structure.

[3]Topic position is pre-Spec-CP, presumably adjoined to CP, and a topic NP can occur in any type of clause, with anything in SpecCP and/or Comp. See Rudin (1986, ch. 2) for further details.

[4]This sentence is ok with the reading where **za koga** is the object of **kaza** 'said', i.e. where it originates in the upper clause. It cannot be taken as the object of **dade** 'give', as indicated by the blank in the example.

[5]The English gloss of (12b) is particularly awkward; multiple relatives do not translate easily. A less literal but more understandable translation is "Each will drop in whenever you tell us he should do so". (12a) is taken from Penchev (1984).

[6]Examples (17b) and (18) are from Comorovski (1986).

[7]Some speakers do accept sentences like (1), with multiple WH words moved out of their clause, but even these speakers also accept the same sentences with one WH left behind, as in (11).

i. **Ko koga** misliš [da je video _ _]?

who whom think-2s that has seen

ii. **Ko** misliš [da je **koga** video _]? / **Koga** misliš [da je **ko** video _]?

Furthermore, **koga** in (1) is not in SpecCP; clitics are placed before it (see section 1.3):

iii. * [**ko koga**] si mislio [da je video _ _]]

who whom have thought -2s that has seen-3s

iv. [**ko**] si **koga** mislio [da je video _ _]]

who have-2s whom thought that has seen-3s

'**Who** did you think had seen **whom**?'

t seems that for such speakers focusing as well as WH Movement can operate across clause oundaries, that is, they allow cyclic adjunction to successive IP as well as SpecCP nodes, perhaps nly with certain "bridge" verbs.

[9]Eva Eckert (p.c.) reports that **Kde si kdy myslíš, že budeme spát** "Where do you think (that) we will sleep when?', with the clitic **si** between the two WH words, is possible for her in colloquial speech; this is parallel to the marginal Serbo-Croatian facts discussed in footnote 7.

[9]I assume that WH movement of a second or subsequent WH is adjunction to SpecCP. This assumption is discussed in part 2 of this paper.

[10]Even better is a variant with a preposition: **Za koja ot tezi knigi se čudiš koj znae kăde se prodava** "For which of these books, you wonder who knows where it is sold'. However, it is not clear to me that the phrase 'for which of these books' has undergone WH Movement. Rizzi (1982) notes a similar effect of "heaviness" of the extracted WH phrase in Italian as well.

[11]In fact, as we have seen Polish generally does not permit WH extraction from a clause in any case.

[12]Citchocki's two-Comp analysis of Polish is discussed in section 2.3 below.

[13]The examples in (54) are slightly less natural than those in (53), but this is probably due to the oddness of only a single word following the parenthetical.

[14]In addition, other multiple-fronting languages may provide further types of evidence for constituent structure beyond those that can be seen in the languages studied in this article. For instance, as Ellen Prince has informed me, Yiddish, which appears to be a +MFS language, provides a strong indication not available in Slavic that multiple fronted WH words are not in IP. A verb-second constraint requires **es** to fill the first position in IP in WH questions (for details on pleonastic **es** in Yiddish, see Travis (1984), especially pp. 185-186):

i. Ikh veys nit **ver** es iz geshtorbn.

I know not who it is died

'I don't know who died.'

In multiple questions **es** is still required and follows all of the WHs:

ii. Ikh veys nit **ver vemen** es hot gezen.

I know not who whom Ist has seen

'I don't know **who** saw **whom**.'

[15]See Rudin (1986) for some discussion of this assumption.

[16]See below, section 1.4, for further discussion of the fact that the second WH word cannot be in Comp.

[17]In some cases, for instance, there appear to be differences between human and non-human WH words with the same grammatical function, and there is some variability across speakers in just how rigid the order of WH words is. For further details, see Rudin (1986), chapter 4.

[18]I do not have detailed data on the order of accusative-dative WH word combinations in Romanian, but it appears to be less strict than in Bulgarian.

[19]See Chomsky (1973) for the original Superiority condition.

[20]The distribution of WH adjuncts, another phenomenon which has been attributed to the ECP or similar constraints such as Huang's (1982) Condition on Extraction Domains, is also different in the +MFS languages than in -MFS languages. The facts in this area are subtle and complex, and I leave their untangling for future work. Oversimplifying, the basic facts seem to be that non-subcategorized adjuncts like "how" and "why" are not permitted in multiple questions in +MFS languages at all, except in conjoined structures ("What did you do, and why?"), while in -MFS languages they occur somewhat more freely.

[21]Or at least in all languages that permit multiple questions. See section 2.4.

[22]AHLW argue against any hierarchical structure in Comp (where they place WH words) on the grounds that WH words need to c-command their traces to satisfy quantification theory. But cf. Chomsky's (1986) claim that WH words in multiple questions need not and in fact do not govern their traces at LF.

[23]A similar proposal for extending Aoun, Hornstein, and Sportiche's Comp-indexing algorithm to a SpecCP analysis has been put forward by Jaeggli (1986).

[24]Similarly, in languages like English, which have no ec in subject position in the (ungrammatical) gloss of (82b), the subject-object asymmetry will be accounted for by the LF binding condition alone, regardless of head government.

[25] The adjoined structure in (88b) is designed to accomodate sentences like (59), in which a complementizer cooccurs with and precedes a fronted WH word; this is why I have shown WHs adjoined to the right, not the left, of Comp. In (87) as well one of the Comps could contain a complementizer. Such sentences are discussed further below.

[26]With the possible exception of one construction in Serbo-Croatian in which WH words are treated as indefinite pronouns; this will be discussed below.

[27]See above, and Chomsky (1986)). Also, for arguments that branching must be binary, see e.g. Kayne (1984).

[28]Recall that these languages have free inversion, another reason to suspect that a subject ec is governed by INFL.

[29]In Lasnik and Saito's (1984:280-81) account of Polish, WH-traces adjoined to S had to delete at LF, not being properly governed. In the present account this is not necessary precisely because they have no Domain.

[30]For instance, Middle English relatives of the type NP [WH that S], which Adams, assuming WH adjoined to Comp, cites as a PF violation of (98), do not violate (99).

[31]For a much more detailed treatment of the facts and issues discussed in the remainder of this paragraph, see Adams (1984).

[32]If I am correct in concluding that a subject WH trace is head governed by INFL in these languages (section 2.3), it makes no difference to the head government condition whether the WH word(s) adjoined to IP move to SpecCP at PF or not.

[33]This of course is also the S-structure for Spanish, which, although it permits WH-island violations and has multiple questions, adjoins all WH words in multiple questions to SpecCP only at LF, because of the ban on multiple WH phrases in SpecCP at PF.

[34]Or, more or less equivalently, that French Comp can be unmarked for WH at S-structure, while in English it is automatically marked -WH if it contains no WH word; at LF under this conception WH phrases can move to any Comp that is not -WH.

[35]Lasnik and Saito (1984) saw sentences like (114) as a problem, since they seemed to require Comp-to-Comp movement at LF, which otherwise did not occur. This problem disappears in the present analysis, since *ca* at S-structure is not in Comp (or SPecCP).

[36]Some Czech speakers may accept questions like (115b) with non-echo interpretation (E. Eckert, p.c.). For these speakers Czech is like Serbo-Croatian; see below.

[37]The fact that multiple fronting is the most natural and common way to form a multiple question in Serbo-Croatian is presumably connected to the fact that focused material tends to be placed early in the clause.

[38]For languages where clitics follow the first major constituent.

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